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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,131

12/22/2005

Bernd Krause

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22852

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01/02/2009

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER  
LLP

901 NEW YORK AVENUE, NW  
WASHINGTON, DC 20001-4413

EXAMINER

MENON, KRISHNAN S

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

01/02/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/532,131	<b>Applicant(s)</b> KRAUSE ET AL.	
	<b>Examiner</b> Krishnan S. Menon	<b>Art Unit</b> 1797	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 December 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12, 14, 16-19 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14, 16-19 and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Claims 1-12, 14, 16-19 and 22 are pending as amended in the RCE of 12/24/08.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12, 14, 16-19 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation of “glass transition temperature of the components of the polymer blends are not more different than 150C” is indefinite because it does not limit the claims to any specific range.

For examination, this limitations is assumed as “glass transition temperature of the components of the polymer blends are within 150C of one another”.

#### ***Specification***

The incorporation of essential material in the specification by reference to an unpublished U.S. application, foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference, if the material is relied upon to overcome any objection, rejection, or other requirement imposed by the Office. The amendment must be accompanied by a statement executed by the applicant, or a practitioner representing

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the applicant, stating that the material being inserted is the material previously incorporated by reference and that the amendment contains no new matter. 37 CFR 1.57(f).

The following information in the disclosure is deemed critical, which is incorporated by reference:

Relating to the conditions of loading the blowing gas into the polymer blend or block copolymer and relating to the foaming conditions as well as determination of the solubility of the blowing gas, the glass transition temperature ( $T_{sub.g}$ ) of the polymer blend/gas mixture or block gas mixture copolymer, the critical temperature of the polymer blend or block gas mixtures copolymer and the critical gas concentration reference is being made to the DE-A-10 033 401, the contents thereof are introduced into the present specification by reference.

[Paragraph 0026 of the Application Publication]

### ***Information Disclosure Statement***

It is suggested that applicant submit in an IDS the following reference cited in the specification, which appears to be relevant to the patentability of this application:

B. Krause, H. J. P. Sij-besma, P. Munukluc, N. F. A. van der Vegt und M. Wessling: Bicontinuous Nanoporous Morphologies by Carbon Dioxide Foaming. *Macromolecules* 2001, 34, pages 8792 to 8801).

### ***Claim Rejections - 35 USC § 102/103***

1. Claims 1-12, 14, 16-19 and 22 are rejected under 35 USC103(a) as unpatentable over Weisse et al (US 2001/0021764), with additional evidences from Klotzer (US 5,980,795), Wong (US 6,620,356), Aubert (US 5,422,377)

Claim interpretation: Claims are for a product, a hydrophilic membrane, having an open nanoporous morphology, comprising polymer blends ~~or block co-polymers~~ having both hydrophobic and hydrophilic components. Some of the dependent claims also recite the polymers or monomers that make the polymers of the membrane. Rest of the limitations of all the claims pertains to the method of making the membrane, and of inherent characteristics of the material. Thus all the claims are product by process. The claims do not recite any additional distinguishable structure.

The Weissse reference teaches a porous membrane made from block co-polymer of sulfonated polysulfone for applications such as dialysis. The polymer used by the reference and that by the applicant appears to be the same or similar – see the working examples in the reference. Moreover, the reference also teaches having blends of polysulfone polymers with PVP as known in the art in the background information – see paragraph 0016-0018. Thus the claims are obvious to one of ordinary skill in the art at the time of invention because the reference teaches that blends can be used to make a hydrophobic polymer hydrophilic instead of the block copolymer. Applicant's specification describes polymer blends and co-polymers as equivalents. The reference does not explicitly state that the membrane is nanoporous, but it is well known that dialysis membranes are ultrafiltration membranes which have pores in the low nanometer range. The 'blowing a gas concentration' is only a process limitation, and is not patentable, as shown above. Regarding the difference in the glass transition temperatures of the polymers, the polymers cited in the reference are same or similar to what is disclosed in the application, therefore, this limitation is inherent in the reference.

Rest of the claims recite process limitations or inherent characteristics of the material, which are not patentable limitations. “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re *Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

The process limitations for making the membrane are also well known in the art as exemplified by Klotzer - see column 2, line 54 - column 3, line 35.

Wong teaches a porous membrane made from blends or block co-polymers of hydrophobic and hydrophilic components by the method of foaming using a foaming gas. See Wong abstract, column 3, line 30 – column 5, line 12, the table in column 6, and working examples. Wong’s foaming method produces more open structure than the nanoporous morphology as claimed. However, the morphology can be controlled and optimized as desired, as taught by Klotzer.

Aubert also teaches a process of making membrane by using a foaming gas, and customizing membrane morphology and density – see column 2, under “Summary of Invention”.

### ***Response to Arguments***

Applicant's arguments filed 12/24/08 have been fully considered but they are not persuasive. They are moot – new grounds for rejection.

Regarding the structure imparted by the process steps, applicant has not shown how the structure differs from the structure taught by Weisse.

Argument regarding the dependent claims: dependent claims recite process steps of process parameters, which do not contribute to the patentability of the product. Characteristics such as the glass transition temperature are inherent in the polymer, which the reference teaches.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Krishnan S Menon/  
Primary Examiner, Art Unit 1797